



2013 Standards Update



Interview with Martha Brook, California Energy Commission

BP: What are the reasons for updating the *Building Energy Efficiency Standards*?

Martha Brook

MB: The *Standards* are updated periodically to comply with the Warren-Alquist Act, which mandates that the California Energy Commission create and periodically update building energy efficiency standards. Updating the *Standards* is also consistent with the Energy Commission's *Integrated Energy Policy Report*, California Air Resources Board's *Climate Change Scoping Plan*, and the California Public Utilities Commission's *Long-Term Energy Efficiency Strategic Plan*, all of which articulate the importance of the state's energy policy goal of zero net energy for new residential construction by 2020 and new non-residential construction by 2030.

BP: What is the process for updating the *Standards*?

MB: The update to the *Standards* is based on the combined research and experience of Energy Commission staff, technical experts who advise the Energy Commission, and utility consultants. Energy-

efficient techniques and technologies are evaluated to determine whether they are ready for inclusion into the *Standards*. Considerations of cost effectiveness, technical feasibility, constructability, and potential energy savings are documented in Codes and Standards Enhancement reports. The content of these reports is shared with industry stakeholders in public workshops to raise, discuss, and resolve potential issues. Based on the results of these public workshops, staff decide on a set of updates to include in the proposed *Standards*. The proposed updates then become the basis of an Energy Commission rulemaking proceeding, in which the Energy Commissioners hear comments on the proposed *Standards* and make the decision to modify and ultimately adopt the proposed *Standards*.

BP: How much energy will the 2013 *Standards* save as compared to the 2008 *Standards*?

MB: A newly constructed residential building built to the prescriptive requirements of the 2013 *Standards* will use 25% less energy for lighting, heating, cooling, ventilation, and water heating than one built to the prescriptive requirements of the 2008 *Standards*. For (nonresidential buildings, there

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Struggling with the *Standards*?



The Energy Commission's Energy Education Center, online since December 2009, provides a variety of tools to help building professionals and

building owners comply with the *Building Energy Efficiency Standards (Standards)*. The Energy Education Center consists of an Online Learning Center and an Energy Videos Center. The Online Learning Center contains courses, study guides, interactive checklists, tutorials, and exams on the *Standards*. The courses cover residential and nonresidential newly constructed buildings, additions, and alterations. The Energy Videos Center features videos on the *Standards*, building science, renewable energy, plan review, and inspection. Please visit the Energy Education Center at www.energyvideos.com.

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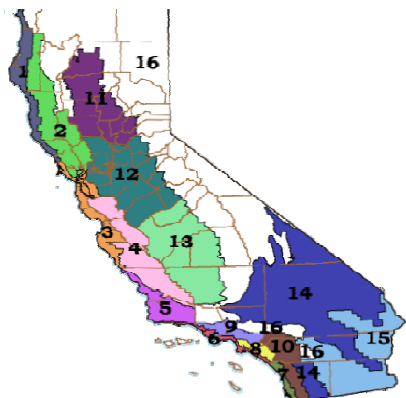
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Where do I find the forms I need to demonstrate compliance with the residential requirements of the 2008 Building Energy Efficiency Standards?

The residential forms are located [here](#).

How do I know which climate zone my project is in?

[The Energy Commission's Climate Zone Page](#) provides several methods for determining which climate zone your project is in.



What is Package D, and where can I find it?

Package D is the standard design package that prescribes the minimum energy efficiency requirements for a home. Package D is found in [Table 151-C of the 2008 Building Energy Efficiency Standards](#).

What is Joint Appendix JA4, and where can I find it?

Joint Appendix JA4 contains insulation values for building materials that must be used in compliance calculations. It can be found in the [2008 Reference Appendices](#).

How do I know whether an appliance or device I am considering has been approved by the California Energy Commission?

Certification to the Energy Commission is required for certain products to be used in a *Building Energy Efficiency Standards*-compliant project. To see whether a product you are considering has been certified to the Energy Commission, visit the Commission's [Appliance Efficiency Database](#).

Which forms are required to be submitted with the application for a building permit?

Every residential construction project will require the appropriate CF-1R form and the Mandatory Measures List (MF-1R) form. The project often will require other forms and worksheets when applicable; refer to the *Residential Compliance Manual*, Section 2.3 (Table 2-1).

I am reroofing a house. Which forms will I need to submit?

You will need to submit both the [CF-1R-ALT form](#) (only complete the "General Information" box on Page 1, the "Roofing Products" table on Page 3, and the signature boxes on Page 5) and the [MF-1R form](#).

I will be installing a new air conditioner or furnace in my house. What forms will my licensed C-20 contractor need to submit? Does the installation need to be verified by a HERS rater?

The contractor will need to submit the [CF-1R-ALT-HVAC form](#) for the appropriate climate zone and the

[MF-1R form](#). The installation may need to be verified by a Home Energy Rating System (HERS) rater; refer to the *Residential Compliance Manual*, Section 8.4.2.

Who can sign a form as the Designer or Documentation Author?

[Section 2.4 of the 2008 Residential Compliance Manual](#) details who may sign a form as a Designer or Documentation Author.

Whom can I hire to help with completing these forms?

To locate a Certified Energy Analyst or Certified Energy Plans Examiner, visit the [website for the California Association of Building Energy Consultants](#) (CABEC) and click "Find an Energy Consultant" or call CABEC at (877) 530-3045.

When can I use electric resistant heating?

Electric resistant heating can be used when there is no gas available to the home, when the existing system is electric resistant heating (even if gas is available), or when using the performance compliance method.

Whom can I hire to do an energy rating of my home?

You can hire a HERS Rater, trained by CalCERTS, which has been certified by the Energy Commission to conduct California whole-house ratings. You can find a list of certified HERS Raters through CalCERTS at www.calcerts.com/Rater_Directory_new.cfm.

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will be a 30% reduction in energy use.

BP: What are some of the major changes to the *Standards* for 2013?

- This is the first *Standards* update designed to put newly constructed homes on a path to achieve California's Zero Net Energy goals by 2020.
- This is the first *Standards* update to establish a photovoltaic compliance option, which allows a portion of the energy generated

by a solar electric system to count toward meeting the energy budget in the performance *Standards*.

- Wall insulation requirements for residential buildings are increased to prevent heat transfer and reduce HVAC loads.



- Process equipment installed in grocery stores, commercial kitchens, data centers, laboratories, and parking garages is now covered by the *Standards*.

- All 3/4-inch and larger residential hot water pipes must be insulated to avoid wasting water and energy, and reduce the time it takes to get hot water to where it is needed.



Photo credit: Energy Upgrade California

BP: When will the 2013 *Standards* go into effect?

MB: The 2013 *Standards* were adopted by the Energy Commission on May 31, 2012, and will go into effect in January 2014.

Residential HVAC Cards

The California Energy Commission and Contractors State License Board have created quick reference cards for residential contractors and homeowners replacing a heating, ventilating, or air-conditioning (HVAC) system. The cards detail what is required by law and what work needs to be performed to ensure optimum HVAC system performance. There are two versions of the card, one for HVAC contrac-

tors and one for homeowners.

HVAC contractors are encouraged to provide a copy of the homeowners card when bidding on HVAC projects to differentiate themselves from contractors who fail to pull permits and comply with the *Standards* and California contractor law.

The cards are available for download [here](#).

RESIDENTIAL CONTRACTORS
Replacing a heating, ventilating, or air-conditioning system?

Make sure you follow these 3 steps:

1. Get a building permit.
California law requires a building permit for this type of work. The Contractors State License Board may require and penalties of up to \$5,000 per violation and/or revoke your license if you do not get a permit. You may also be subject to fines from your local building department.
2. Test the duct system and verify refrigerant charge.
In most existing homes, you must ensure that duct leakage is less than 15% and verify refrigerant charge.
3. Have your work independently verified.
Before work begins you must give your customer the choice of requiring that a RES rate verify duct sealing and refrigerant charge, or having the system included in a random sample for verification.

Why? Following these steps will save your customer money, make their homes more comfortable, and help the environment.

For more information, visit <http://www.energy.ca.gov/Title24/contractors> or www.cslb.ca.gov

HOMEOWNERS
Replacing your heating, ventilating, or air-conditioning system?

Make sure you follow these 3 steps:

1. Confirm that your contractor has pulled a building permit.
California law requires a building permit for this type of work. Your homeowner's insurance may be void and you may be subject to permit penalties and fines if your contractor does not get a building permit.
2. Make sure your contractor tests your ducts and verifies refrigerant charge.
In most existing homes, your contractor must ensure that duct leakage is less than 15% and verify refrigerant charge.
3. Have your contractor's work independently verified.
When duct testing or refrigerant charge verification are required, before work begins your contractor must give you the option of having a Home Energy Rating System (HERS) rate verify proper duct sealing and refrigerant charge, or having your system included in a random sample for verification.

Why? Following these steps will save you money, make your home more comfortable, and help the environment.

For more information, visit the Energy Standards Hotline at (800) 772-3300 or visit the Energy Education Center at www.energyvideos.com. To check a contractor's license status, visit www.cslb.ca.gov or www.cslb.ca.gov

Energy Efficiency Hotline

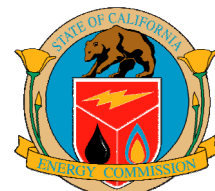
- Toll-free in California: (800) 772-3300
- Outside California: (916) 654-5106
- Title24@energy.ca.gov

Standards Training

- Energy Education Center: www.energyvideos.com
- Additional training: www.energy.ca.gov/title24/training

Edmund G. Brown, Jr.
Governor

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